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Twin-ball joint with improved ball cage

Claims

1. A constant velocity joint in the form of a counter track joint, having the following characteristics:
 - an outer joint part (12) which comprises a first longitudinal axis (L12) as well as an attaching end and an aperture end positioned axially opposite one another, and which comprises outer ball tracks (22),
 - an inner joint part (13) which comprises a second longitudinal axis (L13) and attaching means for a shaft pointing towards the aperture end of the outer joint part (12), and which comprises inner ball tracks (23),
 - the outer ball tracks (22) and the inner ball tracks (23) form pairs of tracks (22, 23) with one another which each accommodate balls (14, 15),
 - circumferentially adjoining pairs of tracks (22, 23, 22', 23') comprise centre lines of the outer and inner ball tracks which, when the longitudinal axes (L12, L13) are aligned, are positioned in planes (E, E') which extend parallel relative to one another and are symmetric relative to the longitudinal axes,
 - a ball cage (16) is positioned between the outer joint part (12) and the inner joint part (13) and comprises circumferentially distributed cage windows (18, 19) which each accommodate pairs of balls (14, 14', 15, 15') of adjoining pairs of tracks positioned

in parallel planes (E, E'),

- the circumferential length (X2) of second cage windows (18) for second pairs of balls (14, 14') is smaller than the circumferential length (X1) of first cage windows (19) for first pairs of balls (15, 15').

2. A joint according to claim 1,
characterised in
that the circumferential length (X1) of the first cage windows (19) is limited to the dimension required for mounting the second balls (14, 14').

3. A joint according to any one of claims 1 or 2,
characterised in
that the joint comprises an even number of at least eight balls (14, 15).

4. A method of assembling a joint according to any one of claims 1 to 3,
characterised in
that first the first pairs of balls (15, 15') are inserted one after the other through the first cage windows (19) of the joint being over-articulated and that, thereafter, the second pairs of balls (14, 14') are inserted one after the other through the second cage windows (18) of the joint being over-articulated.